

CLAIMS

1. A circuit board-use member comprising: a reinforcing plate; a removable organic layer; a flexible film provided with at least one circuit pattern on at least one of two surfaces; and a peeling-assist layer laminated in that order.

2. The circuit board-use member according to Claim 1, wherein an electronic component is bonded to the circuit pattern of the flexible film.

3. The circuit board-use member according to Claim 1, wherein the peeling-assist layer comprises a solder resist.

4. A method for forming a circuit board comprising the step of: peeling a flexible film from a circuit board-use member which comprises the flexible film having a circuit pattern formed on one surface thereof, and a reinforcing plate adhered to the opposite surface of the flexible film to said one surface with a removable organic layer interposed therebetween, wherein the flexible film is peeled away from the reinforcing plate while a peel angle is being maintained in the range of more than 0° to 80°.

5. The method for forming a circuit board, according to

Claim 4, wherein the circuit board-use member further comprises a peeling-assist layer formed on the flexible film, and the flexible film is peeled away from the reinforcing plate.

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6. The method for forming a circuit board, according to Claim 5, wherein the peeling-assist layer comprises a solder resist.

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7. The method for forming a circuit board, according to Claim 4, wherein the flexible film is peeled away from the reinforcing plate while the flexible film is being placed along a curved support body or the reinforcing plate is being curved.

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8. The method for forming a circuit board, according to Claim 7, wherein the curved support body or the curved reinforcing plate has a curvature radius in the range of 20 to 1,000 mm.

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9. The method for forming a circuit board, according to Claim 7, wherein the flexible film is peeled away from the reinforcing plate while the flexible film or the reinforcing plate is being curved.

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10. The method for forming a circuit board, according to Claim 7, wherein the flexible film which is placed along the curved support body is peeled away from the reinforcing plate by relatively moving the curved support body with
5 respect to the reinforcing plate while the curved support body is being rotated, a roll surface speed V_1 of a flexible film-support surface of the support body is set larger than a relative moving speed V_2 of the support body with respect to the reinforcing plate, and a tension per unit cross-
10 sectional area applied to the flexible film when the flexible film is peeled is controlled to be $2.4 \times 10^7 \text{ N/m}^2$ or less.

11. The method for forming a circuit board, according to
15 Claim 4, wherein the flexible film is peeled away from the reinforcing plate by inserting a wedge-shaped peeling member between the reinforcing plate and the flexible film.

12. The method for forming a circuit board, according to
20 Claim 4, wherein an electronic component is bonded to the circuit pattern when the peeling is performed.

13. The method for forming a circuit board, according to Claim 4, wherein the circuit board-use member is heated when
25 the peeling is performed.

14. An apparatus for forming a circuit board by peeling a flexible film from a flexible film substrate comprising a reinforcing plate and the flexible film which is provided with a circuit pattern and which is adhered to the reinforcing plate, the method comprising one of the following means:

i) means for separating the flexible film from the reinforcing plate while the flexible film is being in

contact with a curved support body;

ii) means for separating the reinforcing plate from a support body for the flexible film while the reinforcing plate is being curved; and

iii) means for relatively moving a support body and peeling means, the support body supporting a circuit board-use member, the peeling means having a wedge-shaped peeling member for peeling the flexible film.

15. The apparatus for forming a circuit board, according to claim 14, wherein the means i) comprises a rotation drive device rotating the support body, a relative movement drive device relatively moving the support body with respect to reinforcing plate holding means, and a speed control mechanism independently controlling the rotation speed and the relative moving speed.

16. The apparatus for forming a circuit board, according to claim 15, further comprising: a speed-ratio control device in which a roll surface speed V1 is controlled to be
5 higher than a relative moving speed V2; and a tension control device in which a tension applied to the flexible film in peeling is controlled at a predetermined level or less.

10 17. The apparatus for forming a circuit board, according to claim 14, wherein, in one of the means i) and the means ii), on the curved support body of the means i) or on the support body for the flexible film of the means ii), a cushioning layer and/or a recess portion at a position
15 corresponding to that of an electronic component is provided.

18. The apparatus for forming a circuit board, according to claim 14, wherein, in one of the means i) and the means ii), on the curved support body or on the support body for
20 the flexible film, a layer having tackiness is provided.

19. The apparatus for forming a circuit board, according to claim 14, wherein the peeling means has a positioning system for the wedge-shaped peeling member.

20. The apparatus for forming a circuit board, according to claim 14, further comprising means for heating the reinforcing plate and the flexible film.

5 21. A circuit board formed by the method according to Claim 4 or formed by the apparatus according to Claim 14.